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REGENERATION
General
Cork Oak

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CORK OAK CULTURE

by

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GENERAL

Cork oak (Quercus suber Linn.), a large evergreen oak that grows in the countries that border the central and western parts of the Mediterranean Sea, has a bark that becomes the familiar "cork wood" of commerce when peeled or stripped from the tree. The first stripping or harvest of the bark may be carried out when the tree is eight inches in diameter, at which time the normal tree is about fifteen years of age. As formation of new cork begins immediately after stripping, the harvest may be repeated every seven to ten years for a period of more than one hundred years. Furthermore, the quality of the cork improves for the first three strippings.

It is estimated that cork oak occupies some 5,000,000 acres in the Mediterranean Region with a potential yield of something less than 350,000 tons per year. Before the war, the total actual harvest of more than 250,000 tons found a ready market at what was considered a fair price. If the future use of cork expands, a shortage of this versatile material may develop. The development of molded cork insulation, the expanding use of cork for floor and wall coverings, and the increasing need for engine gaskets, as well as such well known products as bottle stoppers, crown caps, handles for fishing rods and other implements, shoe insoles, linoleum, friction pads, etc., indicate that the total demand for cork products is likely to increase rather than decrease in the future.

The presence of more than one hundred cork oak trees growing in the southern states from Virginia to Texas and more than two thousand acorn bearing trees growing in Arizona and California indicates that cork oak may be widely adaptable in the southern and western parts of the United States where abundant sunshine and well-drained soil are available. There is some question, however, whether cork will become an important commercial crop in this country because of relatively high land and labor costs in this country as compared with countries where cork production is profitable. On the other hand, this species makes a beautiful and interesting ornamental tree; it would provide a supplemental source of income on farms and other properties where the tree may be planted along fence rows, roadsides, unused corners, etc.; and in time of emergency large numbers of cork oaks growing in this country would be an excellent safeguard against shortages of cork, such as have developed in our last three wars when commerce with Spain and Portugal was disrupted.

CULTURE OF CORK OAK

The successful culture of cork oak in localities to which it is suited is no more difficult and not greatly different than the culture of the more common ornamental trees. However, as with other kinds of plants, there are requirements and characteristics perculiar to the species that must influence cultural methods if best results are to be assured.

Temperature

Cork oak will survive in localities where the winter minimum temperature occasionally

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drops to zero degrees Farenheit or even a few degrees below zero if the trunks of the trees are protected for four or five years until the bark becomes corky. It may be assumed that high temperatures will not harm this tree as it is growing vigorously in the Central Valley of California where maximum temperatures of 115 degrees Farenheit are not uncommon.

Soil

Cork oak is said to grow best and produce the highest quality cork in its native habitat on well-drained, sandy-loam soils that are not limey in nature and often rather low in fertility. In the United States, however, trees are growing in many different soil types, including clay soils, peat soils and limey soils. The water table seems more important than the soil texture, for plantations made where the water table is less than six or eight feet below the surface have failed. A surface soil that becomes hard and baked is not a good soil for cork oak as attested by failure of trees planted in such soils.

Shade

Cork oak naturally grows in sunny locations and does not succeed well in shady situations. It will start growth when partially shaded and even seems to prefer partial shade when young, but to make normal development it must, after a few years, have nearly full-sun conditions. This need for much light may eliminate "fog belt" areas of the West Coast that might otherwise be suitable for growing cork oak.

Moisture

If drainage is good, cork oak grows well in parks that are sprinkled each day or along streams where the soil is continually moist. On the other hand it also grows well, but more slowly, where the annual precipitation is as low as twenty inches per year.

Seed Storage

Cork oak acorns lose their viability when the moisture content drops below 35%. Newly ripened acorns normally have a 70 to 80% moisture content and moisture loss of more than 10% below the normal may adversely affect the germination of the seeds. If placed on a table at usual room temperature for a week, most of the acorns will die. It is, therefore, preferable to plant acorns immediately after their collection if the soil is well drained and well aerated. If immediate planting is not possible, certain storage requirements should be met. If refrigeration space is available, it is possible to keep the acorns several months in moist atmosphere at a temperature of from 35 degrees Farenheit to 42 degrees Farenheit, the temperature at which many food products are stored. If cold storage is not available, acorns may be mixed with moist sand or moss or soil and piled in a cool, shady place for several weeks. Many of them will germinate under such conditions, but these can be planted in permanent locations or in containers without undue loss. Sprouted seeds should not be discarded if the root is broken off or if the top is injured because these parts will grow out again without apparent loss of vigor to the developing plant.

Direct Seeding

The cheapest and perhaps most satisfactory method of establishing cork oak is to plant the acorns directly in well prepared seed spots as soon as they are received. The seed spots are prepared by removing all vegetation from a circle a yard in diameter, then pulverizing the soil to a depth of six inches. The seeds should be planted in moist soil and covered to a depth of about one inch. This may be done at any time during the fall, winter, or spring. The greatest danger to this type of planting is from birds, squirrels, gophers, and mice.

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Nursery Practice

In Europe the Cork Oak is sometimes grown in nursery rows until it is two or three inches in diameter, then cut back to a six-inch stump and transplanted bare-rooted to the permanent location. Under the conditions prevailing in some parts of Portugal, this method is successful, as cork oak sprouts very readily from the crown. In this country the transplanting of bare-rooted small stock has not been very successful and most of the trees grown in this country are produced by planting acorns directly into containers or by transplanting small seedlings from a sand seed-bed to containers of various types. At the time transplanting, the seedlings are from 1 to 3 inches high and with roots from one to two feet long. The roots are usually pruned to about six inches length to encourage branching. The favorite types of containers are gallon size tin cans with drainage holes punched in the bottom, or tubes made from 20 to 30 pound tar paper. The tubes most used are two inches in diameter and twelve inches long and are held in shape by asphalt cement or by wire staples. Apparently any standard plant container of sufficient size will serve. If the acorns are planted in the containers in the fall, they may be planted in their permanent locations in the spring. If the seeds are planted in containers in the spring, the trees are usually held until the following fall before out-planting is done. The tar paper container should not be removed from the seedling when it is planted as the tube acts as a protector against rodents.

Care

Cork oak is quite drought resistant and does not require the care that is necessary for some trees; however, cultivation to remove competing weeds is helpful, and if the season is particularly dry one or two waterings during the summer will increase the growth of the trees. The seedlings are very hardy and they will survive drought far better than most of the common ornamental trees. The roots may be severly damaged without permanent injury to the tree and if the tops are broken or eaten off by animals new shoots will soon start just below the surface of the ground to replace the top. Because of this tendency to sprout from the crown, it is good practice to train it to the desired form by staking each tree and pruning off low branches. If cork oak is given what would be considered reasonable care for any other commonly cultivated tree, and if the soil and climatic conditions are suitable, the mortality should be no greater than is expected in planting apples or elms.

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